

04-05-2022

Bachelor of Pharmacy IV Semester- (End Semester Examination)- April - 2022
3643

PHYSICAL PHARMACEUTICS II

Instructions to the candidates:

1. Do not write anything on question paper except Roll Number, otherwise it shall be deemed as an act of indulging in unfair means and action shall be taken as per rules.
2. Section-A contains Q-1 and Q-2 with Five (5) questions each. All the Ten very short type questions are compulsory and carry equal marks ($10 \times 2 = 20$).
3. Section-B contains Q-3, Q-4 and Q-5. Answer any TWO questions among the three descriptive type questions and carry 10 marks each. ($2 \times 10 = 20$).
4. Section-C contains Q-6 and Q-7 with FIVE (5) and FOUR (4) sub divisions. Answer any FOUR (4) and THREE (3) questions of choice among the short answer type questions and all carry 5 marks each. ($7 \times 5 = 35$)

Duration: 3 Hours

No. of Pages in this Question Paper: 2

Total Marks: 75

Section – A

1. Answer the following questions in very short (Maximum 20 words): 5 x 2 = 10
 - a) How colloids differ from suspensions?
 - b) Give the reason behind the yield value.
 - c) Enlist the drawbacks of particle size determination by optical methods.
 - d) Define the pseudo first order reactions.
 - e) Give two examples of non-Newtonian materials.
2. Answer the following questions in very short (Maximum 20 words): 5 x 2 = 10
 - a) Specific surface.
 - b) Stabilization of drugs against hydrolysis.
 - c) Peptization.
 - d) Elastic modulus.
 - e) HLB scale.

Section – B

Answer (any Two) of following questions in Long answer:

2 x 10 = 20

3. What is the importance of particle size in the pharmaceutical products? Explain in detail about one method for particle size determination.
4. Discuss the various physical and chemical factors influencing the stability of drugs in solutions.
5. What are coarse emulsions? How these systems are different from micro emulsions? Explain the theories of the emulsification process.

Section – C

6. Answer (any Four) of the following questions in short answer: 4 x 5 = 20
 - a) Why one should prefer cone and plate viscometer over cup and bob viscometer?
 - b) If the 50% of the drug with initial concentration 100 µg/mL degrades in 12 months by first

order, then determine:

- i) Rate of degradation
 - ii) Half-life of the drug
 - iii) Shelf life of the drug
 - iv) Time required to reach the concentration of $25 \mu\text{g/mL}$
- c) Discuss any two parameters which are used to define the flow properties of powders.
- d) Discuss the flocculated and deflocculated dispersions.
- e) Discuss any one method to determine surface area.

7. Answer (any Three) of the following questions in short answer:

$3 \times 5 = 15$

- a) Explain thixotrophy and give the reason for this rheological behaviour.
- b) Write a note on accelerated stability testing.
- c) Which parameters are used to express the stability of the emulsions? Explain any two techniques to improve the stability of o/w emulsions.
- d) Write a note on the derived properties of the powders.